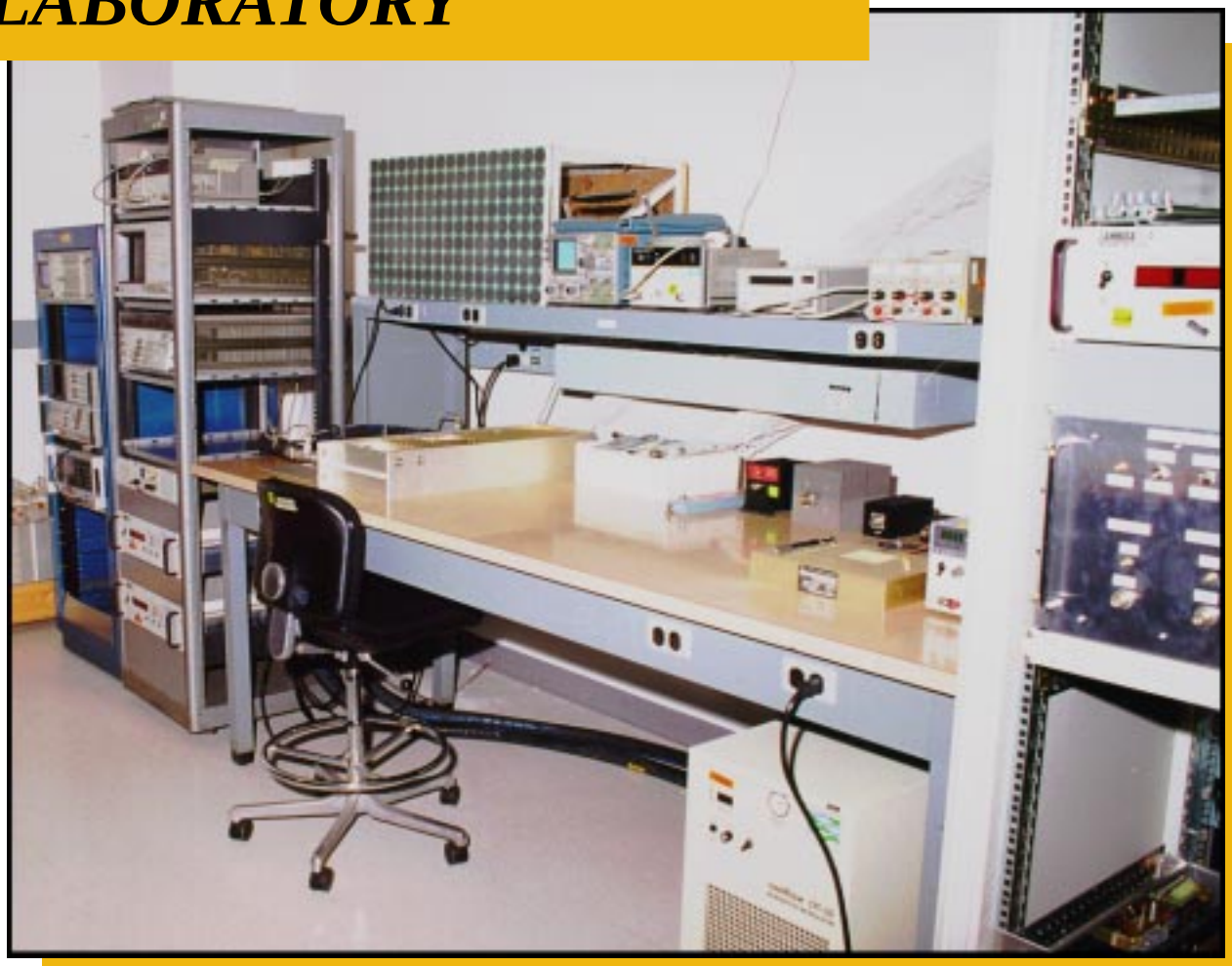
SURVEILLANCE RADAR LABORATORY



The Surveillance Radar Lab is an exploratory development facility for ASW, ASUW, and AEW radar systems. The facility is used to develop and test new and innovative techniques and hardware that are being considered for implementation into either existing or next generation radar systems.

Surveillance Radar Laboratory

The Surveillance Radar Laboratory has been used to develop several different phased arrays over the past 20 years. The first of these was the ESUS array. ESUS was a L-Band phased array that incorporated 200 solid state transmit/receive (T/R) modules. The next array that was developed in the radar lab was the High Altitude Remotely Piloted Surveillance System (HARPSS). The HARPSS antenna is a lightweight L-Band phased array radar that is capable of detecting and tracking airborne targets. The final/current array that is under development is the AEW Wide-band array. The Wide-band array is capable of operating at both UHF and L-Band. The Surveillance Radar Lab serves as the test and integration facility for the AEW Wide-band T/R modules.

The Surveillance Radar Lab has also been used as an integration and test facility for existing radar systems. Two AN/APS-134 radar systems were tested and installed into two P-3 aircraft for Pt. Mugu. These aircraft were responsible for clearing the test ranges at Pt. Mugu. Currently, the Surveillance Radar Lab has two instrumented coherent radar systems, one X-Band and one L-Band that are capable of collecting polarimetric radar data.

Currently, the Surveillance Radar Lab has two instrumented coherent radar systems, one X-Band and one L-Band. These systems are designed to capture four channels of information simultaneously and to digitally record it for future processing. The primary purpose of these systems is to record polarimetric sea clutter data, in-phase and quadrature signals from both horizontally and vertically polarized antenna feeds, which is used to determine the radar cross-section scattering matrix of sea clutter. In addition to the recording of radar returns the system is also capable of recording up to 16 dc voltages that correspond to different parameters of the test radar systems.

In order to better serve the needs of the fleet, the Surveillance Radar Lab is actively attempting to acquire both an AN/APS-137 and an APS-145 radar system. The AN/APS-137 radar system is currently installed on the S-3B Viking aircraft and is used for maritime surveillance (ASW, ASUW). The APS-145 radar system is currently installed on the E-2C Hawkeye aircraft and is used primarily for detecting and tracking airborne targets (AEW). These radar systems will be integrated into the laboratory and used as test beds for improvements to these radar systems.

For more information contact the Surveillance Radar Laboratory RF Sensors Branch at the Naval Air Warfare Center Aircraft Division, Patuxent River, MD at 301-342-0046.